

COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY

An International Journal

EDITOR

G. A. KERKUT
(Southampton)

List of Contents and Author Index

Volume 76, Part C, 1983



PERGAMON PRESS

OXFORD • NEW YORK • TORONTO • SYDNEY
PARIS • FRANKFURT

Comparative Biochemistry and Physiology

Editor

Professor G. A. KERKUT, Department of Physiology and Biochemistry, University of Southampton
Southampton SO9 3TU, England (Executive Editor). Tel.: (0703) 559122

Members of the Honorary Editorial Advisory Board

T. H. BULLOCK (La Jolla)	E. KREPS (Leningrad)	B. T. SCHEER (Santa Barbara)
C. B. COWEY (Aberdeen)	O. LOWENSTEIN (Birmingham)	C. A. VILLEE (Massachusetts)
R. FÄNGE (Göteborg)	C. MANWELL (Adelaide)	G. WALD (Harvard)
E. FLOREY (Konstanz)	H. S. MASON (Portland)	J. H. WELSH (Maine)
W. S. HOAR (Vancouver)	C. L. PROSSER (Urbana)	
H. KINOSITA (Saitama)	J. ROCHE (Paris)	

Publishing, Subscription and Advertising Offices: *Pergamon Press Ltd, Headington Hill Hall, Oxford OX3 0BW, England (Tel. Oxford 64881).*

North America: *Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523, U.S.A.*

Annual Subscription Rates 1984 (including postage and insurance)

For libraries, research establishments and all other multiple-reader institutions: combined subscription, 1-yr \$1450.00; 2-yr \$2755.00. Part A, Comparative Physiology \$630.00; Part B, Comparative Biochemistry \$630.00; Part C, Comparative Pharmacology and Toxicology \$350.00 (2-yr subscription rates: Part A, \$1197.00; Part B, \$1197.00; Part C, \$665.00).

Specially Reduced Rates to Individuals

In the interests of maximizing the dissemination of the research results published in this important international journal we have established a two-tier price structure. Any individual whose institution takes out a library subscription may purchase a second or additional subscription for personal use at the much reduced rate of \$80.00 per annum (combined subscription). Part A, Comparative Physiology \$55.00; Part B, Comparative Biochemistry \$55.00; Part C, Comparative Pharmacology and Toxicology \$45.00. Parts A and B: Three volumes of each part per year, four issues per volume (Part A—1st of the month; Part B—15th of the month). Part C: Three volumes per year, two issues per volume (commencing Vol. 50, No. 1, 1975).

Microform Subscriptions and Back Issues

Back issues of all previously published volumes are available in the regular editions and on microfilm and microfiche. Current subscriptions are available on microfiche simultaneously with the paper edition and on microfilm on completion of the annual index at the end of the subscription year.

Copyright © 1983 Pergamon Press Limited

It is a condition of publication that manuscripts submitted to this journal have not been published and will not be simultaneously submitted or published elsewhere. By submitting a manuscript, the authors agree that the copyright for their article is transferred to the publisher if and when the article is accepted for publication. However, assignment of copyright is not required from authors who work for organisations which do not permit such assignment. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform or any other reproductions of similar nature and translations. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, electrostatic, magnetic tape, mechanical, photocopying, recording or otherwise, without permission in writing from the copyright holder.

Photocopying information for users in the U.S.A.

The Item-Fee Code for this publication indicates that authorisation to photocopy items for internal or personal use is granted by the copyright holder for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service provided the stated fee for the copying beyond that permitted by Section 107 or 108 of the United States Copyright Law is paid. The appropriate remittance of \$3.00 per copy per article is paid directly to the Copyright Clearance Center Inc., 21 Congress Street, Salem, MA 01970. The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for such copying. In case of doubt please contact your nearest Pergamon office.

The Item-Fee Code for this publication is: 0306-4492/83 \$3.00 + 0.00

PERGAMON PRESS

HEADINGTON HILL HALL, OXFORD OX3 0BW, ENGLAND
MAXWELL HOUSE, FAIRVIEW PARK, ELMSFORD, NY 10523, U.S.A.

CONTENTS OF VOLUME 76C

Vol 76C, No. 1

- | | | |
|---|-----|--|
| Robert B. Hill | 1 | Effects of calcium antagonists on contraction of a holothurian muscle |
| Prishan L. Raheja,
Willem G. Linscheer and
Chaidong Cho | 9 | Prevention of acetaminophen hepatotoxicity by propylthiouracil in the glutathione depleted rat |
| G. E. Westlake, A. D. Martin,
J. I. Stanley and C. H. Walker | 15 | Control enzyme levels in the plasma, brain and liver from wild birds and mammals in Britain |
| Shozo Fujita, Akira Warashina
and Mei Satake | 25 | Binding characteristics of a sea anemone toxin from <i>Parasicyonis actinostoloides</i> with crayfish leg nerves |
| Shuzo T. Suzuki, Yoshiyuki Ebihara,
Shiroyuki Akitomi,
Masataka Nishikawa and
Yoko Kawamura | 33 | Change in ratio of the two hepatic isometallothioneins with development from prenatal to neonatal rats |
| J. Mark Holman and
Benjamin J. Cook | 39 | Isolation and partial characterization of a second myotropic peptide from the hindgut of the cockroach, <i>Leucophaea maderae</i> |
| Shunichi Maemura and Tsuneo Omura | 45 | Drug-oxidizing mono-oxygenase system in liver microsomes of goldfish (<i>Carassius auratus</i>) |
| J. G. George | 53 | Heavy metal detoxication in the mussel, <i>Mytilus edulis</i> —composition of Cd-containing kidney granules (tertiary lysosomes) |
| J. G. George | 59 | Heavy metal detoxication in <i>Mytilus</i> kidney—an <i>in vitro</i> study of Cd and Zn-binding to isolated tertiary lysosomes |
| J. W. Pearson and E. J. Butler | 67 | Effects of selective breeding and age on the ability of the domestic fowl (<i>Gallus domesticus</i>) to oxidize trimethylamine |
| Colin P. Somerville,
Andrea E. Jamison,
by G. Goldie, Andrew Warton,
Masdair MacKellar,
David H. Curnow and Edward J. Keogh | 75 | A pharmacological and ultrastructural study of the rabbit gubernaculum testis |
| J. Harri and O. Hänninen | 81 | Hepatic biotransformation in farmed blue fox and raccoon dog |
| Urg-Michael Chemnitiu,
Norbert Losch, Karin Losch
and Ronald Zech | 85 | Organophosphate detoxicating hydrolases in different vertebrate species |
| J. G. Miller and W. C. Mackay | 95 | Evidence for an internal mechanism of copper toxicity in aquatic animals |
| Shao Shan Ku and
Masashi Takeuchi | 99 | Identification of three further giant neurons, r-APN, INN and FAN, in the caudal part on the dorsal surface of the suboesophageal ganglia of <i>Achatina fulica</i> Férussac |
| Lawrence R. Curtis | 107 | Glucuronidation and biliary excretion of phenolphthalein in temperature-acclimated steelhead trout (<i>Salmo gairdneri</i>) |
| Shigen R. Tanaka and
Dorothy A. Webb | 113 | Octopamine action on the spontaneous contractions of the isolated nerve cord of <i>Lumbricus terrestris</i> |
| John L. Gnagey and
David L. Denlinger | 121 | Brain and ring gland cyclic AMP and cyclic GMP levels during initiation and termination of pupal diapause in flesh flies |

Mohamed Ismail Mohamed,
Mona Sharkawy Aly and
Mervat Fouad Selim

B. H. Ali

Andrew Barber

T. R. Hall, A. Chadwick
and S. Harvey

Alfredo Salibián

A. M. Hilmy, H. K. Badawi
and M. B. Shabana

A. M. Hilmy, H. K. Badawi
and M. B. Shabana

Sherif Soliman

J. Van Marle,
J. Van Weeren-Kramer
and A. Lind

H. Gesser and E. Jørgensen

C. Juel

A. Pinto and D. Piomelli

Michael Mason, Marion E. Wolf
and Aron D. Mosnaim

Takashi Abe and Nobufumi Kawai

Michael C. Swift and
R. P. Morgan

H. Ono, K. Akahane,
H. Fukuda and Y. Kudo

Michel Descamps and
Bernard Lassalle

Dafydd G. Thomas, Anthony Cryer,
John F. de L. G. Solbe
and John Kay

D. G. Walton, L. L. Fancey,
J. M. Green, J. W. Kiceniuk
and W. R. Penrose

- 127 Effects of ambient temperature on brain acetylcholinesterase activity and protein content in three Egyptian vertebrates
- 131 The effect of nitrofurazone on the thiamin status of chickens
- 135 Properties of the serotonergic cerebral ganglion neurons of the gastropod mollusc, *Philine aperta*
- 151 Serotonergic drugs affect prolactin and growth hormone secretion in the domestic fowl
- 157 Studies on the effect of the pyrethroid insecticide decamethrin on ionic transport through the *in vitro* skin of *Rana esculenta*
- 163 Organochlorine pesticide residues in 12 freshwater Egyptian fish species with special emphasis on *Anguilla vulgaris* and *Mugil cephalus*
- 173 Physiological mechanism of toxic action of DDT and endrin in two euryhaline freshwater fishes, *Anguilla vulgaris* and *Mugil cephalus*
- 181 Pharmacological control of ciliary activity in the young sea urchin larva. Effects of monoaminergic agents
- 193 Properties of a catecholaminergic system in some coelenterates. A histochemical and autoradiographic study
- 199 Effect of vanadate and of removal of extracellular Ca^{2+} and Na^{+} on tension development and ^{45}Ca efflux in rat and frog myocardium
- 203 Pre- and postsynaptic effects of dopamine antagonists on dopaminergic synaptic transmission in *Helix pomatia*
- 209 Vasoconstrictory effects of adrenalin on the perfused head of the eel (*Anguilla anguilla* L.)
- 215 Studies in the mechanism of phenylethylamine uptake by rabbit erythrocytes

Vol. 76C, No. 2

- 221 Cardioactive effects of hornet venom, *Vespa mandarinia*
- 227 Acute toxicity of nitric acid to fingerling rainbow trout (*Salmo gairdneri*)
- 231 Supersensitivity of the GABA receptor in the frog spinal cord as induced by kainic acid
- 237 Influence of putative neurotransmitters on brain electrical activity in *Lithobius forficatus* L. (Myriapoda chilopoda)
- 241 A comparison of the accumulation and protein binding of environmental cadmium in the gills, kidney and liver of rainbow trout (*Salmo gairdneri* Richardson)
- 247 Seasonal changes in aryl hydrocarbon hydroxylase activity of a marine fish *Tautoglabrus adspersus* (Walbaum) with and without petroleum exposure

- Parviz Meghji and Geoffrey Burnstock 255 Absence of purinoceptors in the heart of the turtle (*Emys orbicularis*)
- P. Pärt and R. A. C. Lock 259 Diffusion of calcium, cadmium and mercury in a mucous solution from rainbow trout
- M. Nieminen, P. Pasanen and M. Laitinen 265 Effects of formalin treatment on the blood composition of salmon (*Salmo salar*) and rainbow trout (*Salmo gairdneri*)
- Stefan Nilsson and Susanne Holmgren 271 Splanchnic nervous control of the stomach of the spiny dogfish, *Squalus acanthias*
- Nicholas R. Price and Sheila J. Dance 277 Some biochemical aspects of phosphine action and resistance in three species of stored product beetles
- Clive G. Jones, Martha P. Hoggard and Murray S. Blum 283 Is sequestration structure-specific in the milkweed bug, *Onco-peltus fasciatus*?
- David G. Saintsing and Thomas H. Dietz 285 Modification of sodium transport in freshwater mussels by prostaglandins, cyclic AMP and 5-hydroxytryptamine: effects of inhibitors of prostaglandin synthesis
- Bao Shan Ku and Hiroshi Takeuchi 291 Effects of synthetic ergot derivatives on the two identifiable giant neurons, sensitive to dopamine, of *Achatina fulica ferussac*
- Tetsuro Iga 297 Basic properties of beta adrenergic receptors mediating melanosome dispersion of melanophores in a cyprinid fish, *Zacco temminckii*
- M. Matsuura, M. Kamura and Y. Muneoka 305 Pharmacological evidence for the existence of presynaptic alpha-like receptors in *Mytilus* muscle
- Enrique L. M. Ochoa, Martha Biscoglio de Jiménez Bonino, Osvaldo Cascone, Silvia Medrano and Maria Berta Cousseau 313 The nicotinic acetylcholine receptor from *Discopyge tschudii*: purification, characterization and reconstitution into liposomes
- Parviz Meghji and Geoffrey Burnstock 319 The effects of adenylyl compounds on the heart of the axolotl (*Ambystoma mexicanum*)
- Katalin S.-Rózsa, J. Salánki and D. A. Sakharov 327 Long-term effect of 6-hydroxydopamine on identified central neurons involved in control of visceral functions in *Helix pomatia* L.
- Angel Hernanz and Fernando Silió 335 Inhibition by aconitine of aconitase of pig heart
- Jeni Clevers and Judith L. Morris 339 6-Hydroxydopamine produces a weight increase in toads
- Arthur Shulkes, Daryl Stephens and Kenneth J. Hardy 345 Distribution of vasoactive intestinal peptide, bombesin, and gastrin-cholecystokinin like peptides in the avian intestinal tract and brain
- G. R. J. Christoffersen and L. Simonsen 351 Intracellular Ca^{2+} activity during slow synaptic hyperpolarizations in *Helix pomatia*
- Maija Castrén and Timo Oikari 365 Optimal assay conditions for liver UDP-glucuronosyltransferase from the rainbow trout, *Salmo gairdneri*
- Wayne J. Kuenzel, John W. Kusiak, Patricia C. Augustine and Josef Pitha 371 Effect of a beta-adrenergic antagonist on blood pressure, heart rate and beta-adrenoceptors in turkey poult

C. Siefker, R. A. Pax
and J. L. Bennett

Jeffrey A. Alderman,
Ramsey Walden and
Carol M. Schiller

John R. Smith

377 *Schistosoma mansoni*: a comparison of male and female muscle physiology

383 Development of rat liver and colon substrate cycle enzymes in offspring with and without prenatal exposure to a carcinogenic dose of 1,2-dimethylhydrazine

391 [³H]Spiroperidol binding in crude membrane suspensions of gill tissue from the marine mussel, *Mytilus californianus*

AUTHOR INDEX

Vol 76C, No. 1-2

- Abe, T. 221
Akahane, K. 231
Akitomi, H. 33
Alderman, J. A. 383
Ali, B. H. 131
Aly, M. S. 127
Augustine, P. C. 371

Badawi, H. K. 163,173
Barber, A. 135
Bennett, J. L. 377
Blum, M. S. 283
Burnstock, G. 255,319
Butler, E. J. 67

Cascone, O. 313
Castren, M. 365
Chadwick, A. 151
Chemnitius, J.-M. 85
Cho, C. 9
Christoffersen, G. R. J. 351
Clevers, J. 339
Cook, B. J. 39
Cousseau, M. B. 313
Cryer, A. 241
Curnow, D. H. 75
Curtis, L. R., 107

Dance, S. J. 277
Denlinger, D. L. 121
Descamps, M. 237
Dietz, T. H. 285

Ebihara, Y. 33

Fancey, L. L. 247
Fujita, S. 25
Fukuda, H. 231

George, S. G. 53,59
Gesser, H. 199
Gnagey, A. L. 121
Goldie, R. G. 75
Green, J. M. 247

Hall, T. R. 151
Hanninen, 81
Hardy, K. J. 345
Harri, M. 81
Harvey, S. 151
Hernanz, A. 335
Hill, R. B. 1
Hilmy, A. M. 163,173
Hoggard, M. P. 283
Holman, G. M. 39
Holmgren, S. 271

Iga, T. 297

Jamison, S. E. 75
Jimenez Bonino, M. B. de 313

Jones, C. G. 283
Jorgensen, E. 199
Juel, C. 203

Kamura, M. 305
Kawai, N. 221
Kawamura, R. 33
Kay, J. 241
Keogh, E. J. 75
Kiceniuk, J. W. 247
Kudo, Y. 231
Kuenzel, W. J. 371
Kusiak, J. W. 371

Laitinen, M. 265
Lassalle, B. 237
Lind, A. 193
Linscheer, W. G. 9
Lock, R. A. C. 259
Losch, H. 85
Losch, K. 85

MacKellar, A. 75
Mackay, W. C. 95
Maemura, S. 45
Marle, J. Van 193
Martin, A. D. 15
Mason, M. 215
Matsuura, M. 305
Medrano, S. 313
Meghji, P. 255,319
Meghji, P. 319
Miller, T. G. 95
Mohamed, M. I. 127
Morgan, R. P. 227
Morris, J. L. 339
Mosnaim, A. D. 215
Muneoka, Y. 305

Nieminen, M. 265
Nilsson, S. 271
Nishikawa, M. 33
Ochoa, E. L. M. 313
Oikari, A. 365
Omura, T. 45
Ono, H. 231

Part, P. 259
Pasanen, P. 265
Pax, R. A. 377
Pearson, A. W. 67
Penrose, W. R. 247
Pinto, A. 209
Piomelli, D. 209
Pitha, J. 371
Price, N. R. 277

Raheja, K. L. 9

S.-Rozsa, K. 327
Saintsing, D. G. 285

Sakharov, D. A. 327	Suzuki, K. T. 33
Salanki, J. 327	Swift, M. C. 227
Salibian, A. 157	
Satake, M. 25	Takeuchi, H. 99,291
Schiller, C. M. 383	Tanaka, K. R., 113
Selim, M. F. 127	Thomas, D. G. 241
Shabana, M. B. 163,173	
Shan Ku, B. 99,291	Walden, R. 383
Shulkes, A. 345	Walker, C. H., 15
Siefker, C. 377	Walton, D. G. 247
Silio, F. 335	Warashina, A. 25
Simonsen, L. 351	Warton, A. 75,343
Smith, J. R. 391	Webb, R. A. 113
Solbe, J.F. de L. G. 241	Weeren-Kramer, J.Van 193
Soliman, S. 181	Westlake, G. E. 15
Somerville, C. P. 75	Wolf, M. E. 215
Stanley, P. I. 15	
Stephens, D. 345	Zech, R. 85